

What is claimed is:

1. A planographic printing plate precursor comprising a flexible substrate and provided thereon, an ink repellent layer or a hydrophilic layer wherein the planographic printing plate precursor has an 830 nm light transmittance of not less than 10%.

2. The planographic printing plate precursor of claim 1, wherein the surface roughness Ra of the outermost surface of the planographic printing plate precursor opposite the ink repellent layer or the hydrophilic layer is from 0.1 μm to less than 2 μm .

3. The planographic printing plate precursor of claim 1, wherein a back coat layer is provided on the surface of the flexible substrate opposite the ink repellent layer or the hydrophilic layer, and is an outermost layer.

4. The planographic printing plate precursor of claim 3, wherein the back coat layer contains a light heat conversion material.

5. The planographic printing plate precursor of claim 3, wherein the back coat layer contains a thermoplastic material.

6. The planographic printing plate precursor of claim 3, wherein the back coat layer has adhesion force such that when the back coat layer is caused to adhere to a glass plate surface at a pressure of 10 g/cm^2 at 25° C for 10 minutes, and then peeled from the glass plate, the peeling force necessary to peel the back coat layer is not more than 10 g/cm .

7. The planographic printing plate precursor of claim 3, wherein the back coat layer has a surface roughness R_a of from $0.1 \text{ }\mu\text{m}$ to less than $2 \text{ }\mu\text{m}$.

8. The planographic printing plate precursor of claim 1, wherein at least one layer on the ink repellent layer or the hydrophilic layer side contains a light heat conversion material

9. The planographic printing plate precursor of claim 1, wherein the thickness of the flexible substrate is from 10 to $25 \text{ }\mu\text{m}$.

10. A method of fixing a planographic printing plate precursor on a plate cylinder of a printing press capable of forming an image on the plate cylinder, the surface of the plate cylinder having orifices or grooves to obtain reduced pressure by suction, existing only at a portion corresponding

to the peripheral portion of an image formation region in the planographic printing plate precursor, the method comprising the steps of:

mounting the planographic printing plate precursor on the plate cylinder; and

applying suction to the planographic printing plate precursor through the orifices or grooves to fix the planographic printing plate precursor on the surface of the plate cylinder.

11. The method of claim 10, wherein the peripheral portion is outside register marks.

12. The method of item 10 above, wherein the planographic printing plate precursor is the planographic printing plate precursor of claim 8.

13. A method of fixing a planographic printing plate precursor, comprising a flexible substrate and provided thereon, an ink repellent layer or a hydrophilic layer, on a plate cylinder of a printing press capable of forming an image on the plate cylinder, the method comprising the steps of:

mounting the planographic printing plate precursor on the plate cylinder so that the surface of the planographic

printing plate precursor opposite the ink repellent layer or hydrophilic layer faces the plate cylinder;

providing a layer having a light heat conversion function between the planographic printing plate precursor and the plate cylinder; and

exposing the planographic printing plate precursor employing infrared to near infrared light from the ink repellent layer or hydrophilic layer side to heat the layer having a light heat conversion function due to light heat conversion, whereby the planographic printing plate precursor is fixed on the plate cylinder.

14. The method of claim 13, the surface of the plate cylinder has orifices or grooves, wherein the method further comprises applying suction to the planographic printing plate precursor through the orifices or grooves.

15. The method of claim 13, wherein the layer having a light heat conversion function is provided on the surface of the plate cylinder, and an outermost surface of the planographic printing plate precursor opposite the ink repellent layer or hydrophilic layer has a surface roughness R_a of 0.1 to less than 2 μm .

16. The method of claim 13, wherein the surface of the plate cylinder has a surface roughness Ra of 0.1 to less than 2 μm .

17. The method of claim 16, wherein the layer having a light heat conversion function is provided as an outermost layer on the surface of the planographic printing plate precursor opposite the ink repellent layer or hydrophilic layer.

18. The method of claim 13, wherein the infrared to near infrared light is an infrared to near infrared laser.

19. The method of claim 18, wherein the exposing is carried out so that the light is brought into focus on the surface of the planographic printing plate precursor opposite the hydrophilic layer or ink repellent layer or its vicinity.

20. The method of claim 10, wherein the plate cylinder surface is comprised of a detachable material.